Environmental Technology Verification Program ETV

October 2001

QUARTERLY REPORT

Teresa Harten Named New ETV Director, Penelope Hansen Retires

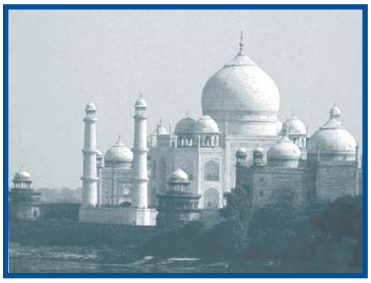
Penelope Hansen, Director of the Environmental Technology Verification (ETV) Program since its inception, retired on September 1, 2001 after a distinguished 30-year career at EPA. A recent recipient of EPA's Gold Medal for Distinguished Career Service, Ms. Hansen also received one Silver and five Bronze Medals, one of the Agency's first Quality Management Awards, a special Superfund Leadership Award, the 1999 Office of Research and Development (ORD) Statesmanship Award, and the Vice President's Hammer Award for Service to the American People. She represented EPA at over 500 conferences in the U.S. and abroad.

After serving in various positions in a number of EPA offices, Ms. Hansen came to ORD in 1994 to become the Director of the Technology Coordination Staff – the ORD group charged with implementing the newly created Environmental Technology Initiative. Under Ms. Hansen's leadership, this group spearheaded the design and implemention of EPA's ETV Program, which is now the largest and most comprehensive environmental technology performance verification program in the world. Under her guidance, the ETV Program successfully implemented 12 verification pilots, established 18 stakeholder groups with over 1,100 stakeholders, developed 50 generic test protocols, and issued 120 verification reports and statements. Ms. Hansen plans to continue working on the development of new approaches to public and private program design and implementation as a consultant in the private sector.

E. Timothy Oppelt, Director of ORD's National Risk Management Research Laboratory (NRMRL), named Teresa Harten as the new Director of the ETV Program. Ms. Harten brings outstanding talent and experience to this important position. She previously served as Chief of the Clean Processes Branch in NRMRL's Sustainable Technology Division. Her work has included research and permitting experience related to wastewater technology, drinking water treatment, and pollution prevention. Before coming to EPA, Ms. Harten worked for the State of Ohio EPA and the City of Cincinnati in environmental permitting, enforcement, and research. This experience, as well as her work with EPA Program Offices and the metal finishing industry through EPA's Common Sense Initiative (CSI), will be invaluable in her interactions with ETV stakeholders, in preserving the superb EPA ETV team that has evolved to date, and in continuing the high level of success of the ETV Program.

While previously directed from NRMRL's Washington, DC office, the ETV Program is now operated out of NRMRL's main office in Cincinnati, OH, where Ms. Harten is located.

ETV Workshop in India Successful



During the week of September 10, 2001, the Indian Ministry of Environment and Forests (MoEF), U.S. Agency for International Development (AID), U.S. EPA, U.S.-Asia Environmental Partnership (U.S.-AEP), and Federation of Indian Chambers of Commerce and Industry (FICCI) sponsored an Environmental Technology Week in New Delhi, India. The event included the first week-long environmental technology verification workshop held outside of the U.S. Five representatives from EPA and the ETV Program helped to plan and run this week-long event.

Representatives included Dennis Cunningham and Blair Martin from EPA, Adam Abbgy from Battelle of the ETV Advanced Monitoring Systems Center, Gordon Bellen from NSF International of the ETV Drinking Water Systems Center, and Stephen Piccot from Southern Research Institute of the ETV Greenhouse Gas Technology Center.

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Center Stage

ETV Advanced Monitoring Systems Center

Advanced Monitoring Systems

- Began testing three arsenic water analyzers in September.
- Observed verification testing of a multi-metals continuous emissions monitor (CEM) by the U.S. Army's Construction Engineering Research Laboratory. The Center will prepare a verification report for this multi-metal CEM using data from this test.

Site Characterization and Monitoring Technologies

- Held a technical panel conference call on lead-in-dust technology verification on July 17.
- Held a conference call for vendors of lead-in-dust technologies on August 2.

ETV Air Pollution Control Technology Center

- Held a mobile sources technical panel and vendors' meeting on August 14 in Arlington, VA.
- Identified volatile organic compound (VOC) controls as a new technology area for verification and began to form a VOC controls technical panel.

ETV Greenhouse Gas Technology Center

- Completed the test plan for KMC Controls Inc.'s Sight Glass Monitor.
- Completed the test plan for JCH Fuel Solution's Automatic Fuel Cleaning and Maintenance System.

ETV Drinking Water Systems Center

- Began testing an ultraviolet (UV) radiation disinfection system in September.
- Stakeholders participated in two conference calls with EPA's Office of Drinking Water and Ground Water to discuss the draft guidance on the Long Term 2 Enhanced Surface Water Treatment Rule and harmonization of the guidance with ETV protocols.

ETV Water Protection Technologies Center

Source Water Protection Technologies

- Began verification testing of five nutrient reduction technologies. Four are being testing in Buzzard's Bay, MA, and one is being tested in Vancouver, British Columbia, Canada.
- Began testing a mercury amalgam separation technology in Richmond, MI.
- Held a ballast water technical panel conference call in August.
- Held a vendor meeting for ballast water control technology vendors in September.

Wet Weather Flow Technologies

- Completed test plans for two flow meters.
- Completed field testing of two flow meters in Quebec City, Quebec, Canada.
- Began testing one vortex high-rate separation technology in Louisville, KY.
- Began testing two high-rate UV disinfection technologies in Parsipanny, NJ.
- Began testing 10 source area treatment devices in Green Bay, WI and Griffin, GA.

ETV Pollution Prevention, Recycling, and Waste Treatment Systems Center

P2 Innovative Coatings and Coating Equipment

- Completed the test plan for Kremlin's Airmix system.
- Held a vendor meeting on August 28 in Johnstown, PA to discuss testing of the Tagnite anodization process for magnesium alloys.

P2 Metal Finishing Technologies

- Completed a draft generic verification protocol for aqueous cleaner recycling technologies.
- Completed testing of a high efficiency reverse osmosis system for recycling rinsewater.
- Completed testing of a high efficiency evaporator for recovering pickling solution and recycling rinsewater.

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Approximately 85 people attended the first two days of the meeting, which provided an overview of EPA's ETV Program and featured presentations on the processes for reviewing, selecting, and financing environmental technologies in India. During the final two days of the meeting, EPA staff and the ETV partner organization representatives ran an intensive workshop on establishing and operating an environmental technology verification program. Approximately 65 representatives from industry, government, financial institutions, technical institutions, technology suppliers, and the media from across India attended the workshop. There was a high level of interaction among the presenters and the audience members, with participants posing many detailed questions about ETV Program operations and financing, verification vs. certification, the level of stakeholder input into protocol development, and other topics. In addition to formal workshop sessions, the U.S. presenters also held brief one-on-one meetings with some participants to discuss specific technical issues, such as technologies being marketed by vendors and test procedures.

Following the workshop's conclusion, part of the participant group reconvened for a fifth day of discussions focused on the development of a technology verification system in India. MoEF, FICCI, and many of the organizations represented during the Environmental Technology Week will likely play key roles in running this verification program.

The ETV Drinking Water Systems Center has announced its plans to conduct verification tests for arsenic adsorptive media technologies. Interested vendors or collaborators should contact Bruce Bartley at (734) 769-8010 or bartley@nsf.org.

ETV and Massachusetts to Conduct Joint Verifications

In August 2001, EPA's ETV Program and the Executive Office of Environmental Affairs of the Commonwealth of Massachusetts signed a Memorandum of Agreement (MOA) for collaborative environmental technology verification. The MOA is intended to "facilitate the flow of factual information on the performance of innovative technologies through collaborative environmental technology testing, verification, reporting, and technology transfer activities with particular emphasis on environmental monitoring, control, protection, pollution prevention, and waste management technologies." The collaborative projects undertaken as part of this MOA will be mutually beneficial and will result in joint verification and information diffusion on environmental technologies.

Massachusetts' interest in innovative environmental technologies stems from the Massachusetts Strategic Envirotechnology Partnership (STEP) Program, which (1) promotes and stimulates private development and investment in envirotechnologies; (2) works to foster a business and regulatory climate that allows envirotechnologies to thrive; and (3) stimulates the development and use of technologies that enhance environmental protection and resource conservation. STEP aims to advance envirotechnologies through various stages of development to commercial viability though regulatory guidance, technology performance verification, business services, applied research, and diffusion into the marketplace.

There are four main benefits of the partnership between EPA and Massachusetts:

- Improved effectiveness and efficiency in environmental technology testing and verification;
- Optimized use of the capacity and resources of both organizations in environmental technology testing and verification;
- Joint reporting on technology performance; and
- More widespread communication and acceptance of the results of both joint and separate environmental technology testing and verification efforts.

Under this MOA, EPA and the Commonwealth of Massachusetts will provide resources and/or technical expertise for performance review and evaluation of technologies or consultation in areas of mutual interest. In addition, the MOA supports the exchange and dissemination of procedural and technical information through databases, information systems, clearinghouses, conferences, technical papers, and other means on technology verification and technology transfer opportunities. To meet these objectives, EPA and Massachusetts may support verifications in three ways: (1) the organizations may co-fund verification activities, (2) EPA may fund verification activities while Massachusetts performs quality assurance oversight or other technical or procedural activities, or (3) Massachusetts may fund verification activities while EPA performs quality assurance oversight or other technical or procedural activities. Under all three arrangements, both EPA and the Commonwealth of Massachusetts will review reports and sign verification statements for all mutually conducted verifications. The first such effort is the evaluation and verification of four continuous emission monitors (CEMs) for mercury, which were evaluated by the ETV Advanced Monitoring Systems Center. The verification statements and reports for mercury CEMs were issued in September 2001.

ETV Program Verifies 53 Technologies in 2001

During fiscal year 2001, the ETV Program verified 53 environmental technologies. In the past quarter, five ETV Centers verified a total of 44 technologies, increasing the number of ETV verified technologies to 164!

In the ETV Advanced Monitoring Systems Center's advanced monitoring systems area, Battelle verified the performance of 19 technologies:

- ✔ Thirteen fine particulate monitors for ambient air;
- ✔ Four mercury continuous emissions monitors;
- ✔ A portable water analyzer/test kit; and
- ✔ A turbidimeter.

In the ETV Advanced Monitoring System Center's site characterization and monitoring technologies area, Oak Ridge National Laboratory and Sandia National Laboratories recently verified the performance of four technologies:

- ✔ A transportable gas chromatograph instrument for on-site analysis of soils for explosives;

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Web Watch

- ✔ Verification reports for the 44 newly verified technologies are available at http://www.epa.gov/etv/library.htm.
- ✔ The test plan for JCH Fuel Solutions, Inc.'s JCH Enviro Automated Fuel Cleaning and Maintenance System from the ETV Greenhouse Gas Technology Center is available at http://www.epa.gov/etv/12/jch_fuel_test_plan.pdf.
- ✔ A summary of the June 21st meeting of the ETV Air Pollution Control Technology Center's mobile sources technical panel has been posted at http://www.epa.gov/etv/08/minutesjun2101.html.
- ✔ A quality management plan and an updated factsheet from the ETV P2, Recycling, and Waste Treatment Systems Center's P2 metal finishing technologies area are available at http://www.epa.gov/etv/10/10_qmp.pdf and http://www.epa.gov/etv/10/10_fsht.pdf, respectively.

ETV Events

Date	Location	Event
November 5-6	Anaheim, CA	ETV Program - ETV exhibit at Clean Air Technologies 2001
November 11-15	Nashville, TN	ETV Program - ETV exhibit at the American Water Works Association's (AWWA's) 2001 Water Quality Technology Conference and Exhibition
November 13	Salt Lake City, UT	ETV Water Protection Technologies Center - Stormwater treatment technology panel meeting
November 14	Salt Lake City, UT	ETV Water Protection Technologies Center - Stakeholder group meeting for the wet weather flow technology area
November 15	Salt Lake City, UT	ETV Water Protection Technologies Center - Utah Water Research Laboratory tour
November 27-29	Washington, DC	ETV Program - ETV exhibit at the Strategic Environmental Research and Development Program's (SERDP's) Partners in Environmental Technology Technical Symposium and Workshop

For more details on ETV events, check out our online calendar at http://www.epa.gov/etv/highup.htm

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- ✔ An integrated, miniaturized sensor platform that employs surface plasmon resonance to detect and measure TNT in contaminated soil;
- ✔ An immunoassay technology that can be used to detect and measure polychlorinated biphenyls (PCBs) in soil and solvent extracts; and
- ✔ A field-portable ion-specific electrode instrument that can be used to quantify concentrations of PCBs, chlorinated solvents, and pesticides in soils, water, transformer oils, and surface wipes.

In the ETV Air Pollution Control Technology Center, Research Triangle Institute verified the performance of four baghouse filtration products (BFPs). BFPs are filtration fabrics used throughout industry to collect particulate matter. Many industrial processes emit particles that are detrimental to human health and the environment. BFPs are one method of capturing these particles.

In the ETV Drinking Water Systems Center, NSF International verified the performance of nine technologies:

- ✔ Two arsenic removal technologies;
- ✔ A backwashable depth filtration unit used to remove *Giardia* cysts and *Cryptosporidium* oocysts;
- ✔ Two cartridge/bag filter elements used to remove *Giardia*-sized and *Cryptosporidium*-sized particles;
- ✔ A coagulation and filtration system used to remove *Giardia* cysts and *Cryptosporidium* oocysts;
- ✔ Two on-site halogen generation technologies; and
- ✔ A membrane filtration system used to remove microbiological and particulate contaminants.

In the ETV Greenhouse Gas Technology Center, Southern Research Institute recently verified the performance of five technologies:

- ✔ Two natural gas-fired microturbines;
- ✔ A natural gas-fired microturbine combined with a heat recovery system;
- ✔ A refrigerant leak monitoring device; and
- ✔ An air/fuel ratio controller for use with lean-burn natural gas-fired internal combustion engines.

In the ETV P2, Recycling, and Waste Treatment Systems Center's P2 metal finishing technologies area, Concurrent Technologies Corporation verified the performance of three technologies:

- ✔ A chromate conversion coating solution maintenance technology;
- ✔ A metal finishing water use reduction and recycling technology; and
- ✔ An aqueous cleaner solution maintenance technology.

For a complete listing of newly and previously verified technologies, see the insert page. The new verification reports and statements are available on the ETV Program web site at http://www.epa.gov/etv/library.htm. A number of additional verifications will soon be issued as well. Be sure to check the ETV Program web site for updates.